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Tele-Audiology Today: Part I - Background, Current Practices, and Case Examples

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April 8, 2020

Presenter Disclosures

- Financial:
  - Honorarium for presenting this course
  - No financial gain or endorsement of any specific telehealth technologies

- Non-financial:
  - Member on the ASHA Political Action Committee (PAC) Board
  - Reviewer for the Technology and Telepractice Committee for ASHA Convention
  - Employee of Norton Sound Health Corporation
Sponsor/Content Disclosures

- Sponsor Disclosure: This course is presented by Salus University in partnership with AudiologyOnline.

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Learning Outcomes

As a result of this course, participants will be able to:

- describe current practices in tele-audiology.
- describe examples tele-audiology solutions and workflows for remote and isolated communities.
- relate case examples and best practices in tele-audiology to their own practice.

Circumstances related to COVID-19
Telehealth

- “The use of electronic information and communication technologies to provide and support health care when distance separates participants.”
  - Health care at a distance

Benefits of Telehealth

- Increased access to providers (addresses provider shortages)
  - Reduced wait times
- Follow-up
  - Reduced lost to follow-up
  - Increased timeliness of care
- Increased communication between providers and patients
- Decreased cost of care
- Reduced travel burden

Field, 1996
IOM Committee
Evidence in Tele-Audiology

- **2010 Literature Review** (Swanepoel & Hall)
  - Screening, Diagnosis, Intervention, Patient Perceptions
    - Video otoscopy
    - Tympanometry
    - OAE
    - AABR/ABR
    - Audiometry
    - Speech-in-noise testing
    - Balance
    - Interoperative monitoring
    - Hearing aid fitting, counseling and verification
    - CI programming
    - Tinnitus therapy

- Govender & Mars, 2017:
  - Audiological management in children
- Bush, Thompson, Iruengu, & Ayugi, 2016:
  - Auditory rehab, CI and HA

Tele-Audiology Programs

- Veterans Affairs (2009+)
  - Remote hearing assessment/hearing aid troubleshooting/programming (Gladden et al 2013, 2015)
- EHDI/Hearing screening
- Cochlear Implant fitting
- Hearing aids
  - Fitting/programming/troubleshooting
    - Campos and Ferrari 2012, Saunders & Chisolm, 2015
- Balance Assessment
  - Mobile applications/Nintendo Wii
    - Park & Lee 2014
    - Patterson et al 2014, Moral-Munoz et al 2018
Types of Telehealth

- **Synchronous (real-time)**
  - Provider and patient at the same time

- **Asynchronous (store-and-forward)**
  - Patient is seen/services provided without provider present

- Hybrid

- **Remote patient monitoring**

- **mHealth (cloud-based/self-guided)**
  - “...any use of mobile technology to address healthcare challenges such as access, quality, affordability, matching of resources, and behavioral norms through the exchange of information”

- **E-Consult**

-Qiang et al. 2011

Real-time/Synchronous
Real-time/Synchronous

- Audiologist provides support to facilitator provision of audiological service
  - Real time interpretation of results
  - Quality of data collected

- Audiologist controls computer at remote location
  - Remote desktop/application sharing software

Asynconous/Store-and-Forward
Asynchronous/Store-and-Forward

- Collection of many types of audiological data
  - Otoscopic images, tympanograms, OAEs, automated hearing thresholds, vitals
  - Low bandwidth

Remote Patient Monitoring

- Remote tracking of health data
  - Blood Pressure
  - Blood Sugar
  - Oxygen Saturation
  - Heart Rate
  - EKG
m-Health

- Health metrics using mobile technology
  - Blood pressure
  - Blood sugar
  - Bluetooth enabled digital scales
  - Biometric data from wearables
  - Hearing testing
  - Otoscopy

E-Consult

- Verbal/audio-only telephone consult
- Virtual check-in via patient portals/messaging technologies
Tele-Supervision/Education

- Students/supervision
- Training of paraprofessionals/assistants/technicians
- Continuing education/training for audiologists
  - Certification/Licensure

Telehealth Models

- Provider to Provider
- Provider to Remote Clinic
  - Real time
  - Store-and-Forward
- Provider Direct to Patient
Unalakleet, AK
Telehealth Services

- Telehealth: Store and forward, real time (video/remote desktop), hybrid, mobile
- Video otoscopy, tympanometry, acoustic reflexes, OAEs, surgical/medical management, hearing aid fitting and programming, troubleshooting, counseling, aural rehabilitation, newborn hearing screening
- In development:
  - Balance assessment, CI mapping, electrophysiologic testing
  - Direct to patient models
AFHCAN Overview

- 250+ clinic locations across the state
- NSHC = 15,000+ cases in 2019
  - (store-and-forward)
- Top encounter types
  - Otologic
  - Behavioral Health

Cases Examples

- Cholesteatoma
- Sudden sensorineural hearing loss
- Brain tumor
- AOM/SOM
- Tube/tympanoplasty/mastoidectomy follow-up
- Hearing aid fitting
Getting started - Quick steps

Clinical Need
- Screening
- Diagnostics
- Intervention
- Existing Patients
- New Patients

Technology
- Hardware
- Software
- Video
- Peripherals
- Portals
- EHRs
- Communication

Models
- Real time
- Asynchronous
- Hybrid
- E-consult

Reimbursement
- Documentation
- Coding/Billing

Clinical Need/Audiology Triage

Existing Patients
- Change in ear/hearing symptoms
- Amplification Follow-up
- Therapies (vestibular/tinnitus)

New Patients
- Diagnostics
  - Otologic
  - Audiologic
  - Vestibular
- Rehabilitation
Technology

- Inventory of hardware/software options
- Video capabilities
- Peripherals

Tips:
- Infrastructure already in place
  - EHR
  - E-consult messaging portals
  - Messaging systems

Electronic Health Record
Internet Penetration

- United States Dec 2019: 89.8%
  - https://www.internetworldstats.com/
- 19 million Americans lack access to fixed broadband service
  - 1/4th in Rural Areas
  - 1/3rd in Tribal Areas
  - FCC Broadband Deployment Reports

Equipment-VTC

- Software
  - Vidyo
  - Zoom
  - Bluejean
  - Doxy.me
  - Many more....

- Hardware (location)
  - Cameras (laptop/desktop)
  - Pan/tilt/zoom (remote)
  - Headset

Deaf, hard of hearing = modifications for hearing over VTC
Modifications to HIPAA

- HHS-Remote Telehealth Communications
  - Popular video chat apps: FaceTime, Google Hangout, Skype, Facebook Messenger

- Notes:
  - Highest level of privacy and security
  - Ensuring privacy during session
  - Consent and acknowledgement of virtual visit service
  - Workflows (work accts and emails)

Equipment-Peripherals

- Home/patient models
  - Vitals
    - Tyto
  - Otoscopy
    - Cell Scope, Tyto, hearScope
  - Hearing
    - uHear, AudCal, Mimi
Equipment-Peripherals

- Professional models
  - Shoebox
  - HearScreen
  - Kuduwave
  - GSI AMTAS
  - Creare

Infection Control

Otoscropy
- Biagio et al 2014
- Lancaster et al 2008

Hearing Testing mobile
- HearXGroup (HearScreen)
  - Swanepoel (https://www.hearxgroup.com/research)
  - Digits in Noise test (HearDigits)
- Clearwater Clinical Shoebox
  - https://www.shoebox.md/clinical-validation/

Hearing Testing Apps (Bright 2016)
- uHear (unitron)- Arczik & Serpanos 2018
- AudCal- Larrosa et al 2015
- Mimi- Hain & Cherchi 2018 (not validated)
Example models

**Existing Patient**
- Telephone call check-in
- Real time VTC for HAC
- Asynchronous appt for remote programming
- Change in hearing
  - App vs mobile device

**New patients**
- CEDRA/In-take Questionnaires
  - (e.g. HHIA)
- Real time case history
- Hearing test
  - App/mobile device
- Remote hearing aid fitting

Northwestern.cedra.edu

The Consumer Ear Disease Risk Assessment (CEDRA) tool is a questionnaire created by a multi-disciplinary and multi-institutional team of researchers and clinicians. CEDRA was designed to let consumers interested in hearing aids assess their
Scenarios: Hearing Sensitivity

- Automated audiometry (store-and-forward)
  - app/mobile device
  - Integrated audiometer
- PC-based audiometry (remote desktop)
  - Remote location

Scenarios: Hearing Aid Fitting

- How to obtain highest level of “best practice” given limitations
  - e.g.
    - collection of RECD during in-person visit
    - automated hearing testing, mailing of pre-programmed hearing aid, VTC and remote programming follow-ups, validation questionnaires

Thinking outside of the box
Telehealth/Licensure Expansion

- Coronavirus Preparedness and Response Supplemental Appropriations Act
  - Waiver 1135
- Alliance for Connected Care
- ASHA

Reimbursement

- Caveats
  - Not an expert
  - Guidelines are changing rapidly
Reimbursement

- ASHA State-by-State
- ASHA - Commercial Insurance
  - actioncenter@asha.org
- American Academy of Audiology - Telehealth Update
  - Reimbursement@audiology.org
- CMS
  - Fact Sheet
  - Frequently Asked Questions
- AMA - Coding advise during covid-pandemic
  - Scenario 10 & 11

Telehealth Service Types

- Telehealth Visits
  - Real time, patient/provider visit (= in-person)
- Virtual Visits
  - 5- to 30-minute exchange (audio and/or video)
  - Remote review of images/video/digital data
- E-Visits
  - Online patient portal
Reimbursement - Telehealth Visits

- provider must use an interactive audio and video telecommunications system that permits real-time communication between the distant site and the patient at home
- prior established relationship, but HHS will not conduct audits to ensure that such a prior relationship existed for claims submitted during this public health emergency
- Paid at same rate as regular, in-person visits

Modifiers/POS

- -95
  - Spontaneous telehealth service (real time interactive audio/video telecommunication between provider and patient)
  - Must meet same key components of in-person exam
- GT
  - Spontaneous telehealth service (older HCPCS code)
- GQ
  - Asynchronous telecommunications system
- POS (Place of service)
  - 02 = telehealth
  - 11 = office or home office
### Reimbursement - Virtual Check-ins

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>G2061</td>
<td>Qualified nonphysician healthcare professional online assessment, for an established patient, for up to seven days, cumulative time during the 7 days; 5-10 minutes</td>
</tr>
<tr>
<td>G2062</td>
<td>Qualified nonphysician healthcare professional online assessment service, for an established patient, for up to seven days, cumulative time during the 7 days; 11-20 minutes</td>
</tr>
<tr>
<td>G2063</td>
<td>Qualified nonphysician qualified healthcare professional assessment service, for an established patient, for up to seven days, cumulative time during the 7 days; 21 or more minutes</td>
</tr>
<tr>
<td>G2010</td>
<td>Remote evaluation of recorded video and/or images submitted by an established patient (e.g., store and forward), including interpretation with follow-up with the patient within 24 business hours, not originating from a related e/m service provided within the previous 7 days nor leading to an e/m service or procedure within the next 24 hours or soonest available appointment</td>
</tr>
<tr>
<td>G2012</td>
<td>Brief communication technology-based service, e.g. virtual check-in, by a physician or other qualified health care professional who can report evaluation and management services, provided to an established patient, not originating from a related e/m service provided within the previous 7 days nor leading to an e/m service or procedure within the next 24 hours or soonest available appointment; 5-10 minutes of medical discussion</td>
</tr>
</tbody>
</table>

### Reimbursement - E-Visits

<table>
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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>98970</td>
<td>Qualified nonphysician health care professional online digital evaluation and management service, for an established patient, for up to 7 days, cumulative time during the 7 days; 5-10 minutes</td>
</tr>
<tr>
<td>98971</td>
<td>Qualified nonphysician health care professional online digital evaluation and management service, for an established patient, for up to 7 days, cumulative time during the 7 days; 11-20 minutes</td>
</tr>
<tr>
<td>98972</td>
<td>Qualified nonphysician health care professional online digital evaluation and management service, for an established patient, for up to 7 days, cumulative time during the 7 days; 21 or more minutes</td>
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</table>
Reimbursement - E-Visits

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Telephone assessment and management service provided by a qualified nonphysician health care professional to an established patient, parent, or guardian not originating from a related assessment and management service provided within the previous 7 days nor leading to an assessment and management service or procedure within the next 24 hours or soonest</td>
</tr>
<tr>
<td>98966</td>
<td>available appointment; 5-10 minutes of medical discussion</td>
</tr>
<tr>
<td></td>
<td>Telephone assessment and management service provided by a qualified nonphysician health care professional to an established patient, parent, or guardian not originating from a related assessment and management service provided within the previous 7 days nor leading to an assessment and management service or procedure within the next 24 hours or soonest</td>
</tr>
<tr>
<td>98967</td>
<td>available appointment; 11-20 minutes of medical discussion</td>
</tr>
<tr>
<td></td>
<td>Telephone assessment and management service provided by a qualified nonphysician health care professional to an established patient, parent, or guardian not originating from a related assessment and management service provided within the previous 7 days nor leading to an assessment and management service or procedure within the next 24 hours or soonest</td>
</tr>
<tr>
<td>98968</td>
<td>available appointment; 21-30 minutes of medical discussion</td>
</tr>
</tbody>
</table>

Documentation

- **Telephone Calls for Patient Management**
  - Problem focused history
  - Decision making and management
  - Record start/stop times

- **Telehealth – VTC**
  - Document who’s present and from what location
  - Chief Complaint
  - Problem focused history
  - Problem focused examination
  - Medical decision making

- **Telehealth - Store and Forward**
  - Chief Complaint
  - A problem focused history
  - A problem focused examination based on the analysis of digital images, sounds or previously recorded video from the requesting provider
    - Digital Images must be specific to the patient’s medical condition and adequate for furnishing or confirming a diagnosis or a treatment plan
  - Medical decision making

- Consent to telehealth services, documentation regarding level of telehealth
### Components of tele-audiology programs

- **Put together a team to help facilitate expedited implantation**
  - training, expertise, relationships
- **Needs assessment**
- **Identify types of models required for existent environment**
  - Utilization of appropriate equipment, EHR integration
- **Determine protocols for patient/workflows**
- **Evaluate sustainability, including reimbursement and market potential**
  - Buy-in (admin, staff, financial)

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#### Overview:

**Clinical Need**
- Screening
- Diagnostics
- Intervention
- Existing Patients
- New Patients

**Technology**
- Hardware
- Software
- Video
- Peripherals
- Portals
- EHRs
- Communication

**Models**
- Real time
- Asynchronous
- Hybrid
- E-consult

**Reimbursement**
- Documentation
- Coding/Billing
Next Week

- More foundation and research in tele-audiology telehealth
- Describe and demonstrate models used in rural Alaska
- Case examples and discussion
  - Feedback from current need
- Telehealth program development/components
- OTC research and patient-driven market
  - OTC Hearing aids/PSAPs and self-fitting/management

Questions/Contact

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References


References cont.